Iowa Communications Network
OSP Log #76160105, Fiber Count -12f SM Dielectric
Pocahontas County, City of Pocahontas, Pocahontas Community Hospital, 606 NW 7th Street

Purpose of the Project: The purpose of this project to provide services via a fiber optic cable route to the hospital for data communications. This route design has taken into consideration the best information available to date with respect to where the primary route is currently located.

Access Point will be Pocahontas High School at 205 2nd Ave NW, Pocahontas, IA.

Overview of the Project:
The ICN intends to extend a 12-strand SM dielectric fiber connection from the Pocahontas High School at 205 2nd Ave NW, herein after referred to as the "high school." to the Pocahontas Community Hospital at 606 NW 7th St., herein after referred to as the "hospital" in Pocahontas Iowa. This will require a new conduit installation of approximately 3352 feet and 5400' of fiber cable in existing and new buried duct along with internal pulling at the hospital and high school. Please see the maps and pictures in the attached engineering plan.

Overview of the Route: The fiber will run from the High School FOTs room to a shared hand hole outside the north wall of the high school, (0+00) (See as-built attached) thence, through existing ICN duct to an existing multi-cell hand hole west and north of the school, (3+17) thence, to a 2nd existing multi-cell hand hole west of the school building in the south ROW of 2nd Ave NW. (3+96). This multi-cell originally served a building that is no longer there. The Contractor will then bore westerly to the southwest quadrant of the intersection of 2nd Ave NW and NW 4th St., (5+46), thence, north along the west ROW of NW 4th St. to the southwest quadrant of the intersection of 4th Ave NW and NW 4th St. (16+31). Thence, westerly along the south ROW of 4th Ave NW to 19+55, then northwest along the south ROW of Railroad St. to intersection of 4th Ave NW and Iowa Highway 4. (28+04). Thence, northerly along the east ROW of Iowa Highway 4 to a point west of the hospital, (35+67), thence, east on hospital property to a point of entry shown in the attached pictures. (37+48).

Preparatory Tasks & Responsibilities:
1. Secure all necessary locates from "Iowa One Call."
2. Locate all private utilities on school property and hospital property.
3. The contractor SHALL coordinate with the End Point and the Access Point prior to installation and contact them no less than 48 hours prior to arrival on site.
4. Exceptions/Additions to Standard Installation Requirements:
   4.1. None

Duct Installation
1. Provide 1-2 inch HDPE, SDR 13.5 duct from Station 3+96 at an existing ICN hand hole just west of the school to Station 37+48 at the hospital. Approximately 3,352 feet of new duct.
2. It shall be the sole responsibility of the contractor to ensure that the fiber installation is in the public Right-of-Way, on school property, or on hospital property.
3. You will be boring parallel to the existing ICN backbone conduit for 105 feet when boring west of Hand hole 3+96.
4. You will be paralleling a Palmer Mutual duct from HH 28+04 to the existing pull box at the hospital.

Hand holes:
1. Existing:
   1.1. Existing Shared ICN Hand Hole at 0+00
   1.2. Existing Multi-cell hand hole at 3+17
   1.3. Existing Multi-cell hand hole at 3+96

2. Install an ICN-furnished 24" X 36" X 30" New Basis hand hole with 20T lid at the following locations per ICN Standard Practice:
   2.1. Station 5+46
   2.2. Station 16+31
   2.3. Station 19+55
   2.4. Station 28+04
   2.5. Station 35+67

Fiber Installation

1. Install approximately 5400-feet of ICN-furnished, dielectric 12-strand single mode fiber from Station -1+10 to 37+48 and then into Hospital to Data Room.
2. **Slack Loops** shall be installed at the following locations:
   2.1. Coil 150 feet in each new hand hole(s) listed above; at 8 location(s).
   2.2. At the -1+10 FOTs room location leave a 50-foot maintenance coil on an ICN-furnished Leviton storage ring.
3. Cable shall also be routed through the school 3" PVC interior conduit per the engineering drawings.

Building Entry at Access Point – The Pocahontas High School

There is an existing ICN duct from the ICN hand hole at 0+00 to the School FOTs room. No new building entry will be necessary.

1. Place wall mounted FDP on north wall as shown in the pictures
2. All firewall penetrations shall be sealed.
3. Attach tracer wire to a new Tri-View to be installed at this location.
4. Move the back bone tracer wire from the damaged pedestal to the new Tri-View
5. Fiber Installation: Pull the fiber through the conduits to the FOTs room located at Sta minus 1+10
6. There is an existing ground rod at the damaged pedestal location.
7. Install a Leviton slack ring with 50 feet of slack on the north wall of the FOTs room
8. See the pictures in the attached engineering plan.

Building Entry at End Point – The Pocahontas Community Hospital

1. Exterior Installation:
   1.1. OSP contractor must remove and replace a small section of concrete in the corner as shown in the engineering drawings.
   1.2. Provide a 1-1/2-inch Galvanized Iron Pipe (GIP) from the end of the conduit at station 37+48 to the existing pull box.
   1.3. Transition from 2" HDPE to 1-1/2 inch GIP using a 90 degree longsweep.
   1.4. Place a ICN provided ground rod below the surface of sidewalk under the pull box.
   1.5. Route the ground wire from the puck/pull box to the ground rod with ½ inch GIP.
   1.6. Mount a TII-163 locate puck on the side of the existing pull box.
   1.7. A hospital approved electrical contractor will extend the conduit from the aforementioned pull box to the data room.
   1.8. Secure all riser conduits with 3 each two-hole conduit straps.
   1.9. Seal the hole in the exterior wall with mortar. Ensure that the penetration is watertight.

2. Interior Installation:
   2.1. Note: A hospital electrical contractor will place EMT conduit from the hospital data room to the building entry point. The hospital facilities director will locate the entry point for the OSP contractor. The OSP contractor must place a 12x12x6 pull on the interior of the wall penetration.
3. Fiber Installation: Pull the fiber through the conduit to the data room located at approximately 38+60
4. See the pictures in the attached engineering plan.

NOTE: At the conclusion of the project, ensure that a pull rope is left in ALL pathways, both inside and outside, new and existing.

Locate Facilities at all locations: The OSP cable installation contractor is responsible for placement of all locate facilities and wires in preparation for the splicing contractor**:**

All tracer wire for this project will be furnished and installed by the contractor.

Note: The contractor shall provide #12 AWG, Solid HF CCS 30 Mil HDPE High Flex Tracer Wire, orange in color and labeled "Caution Communication Line" (standard communication tracer wire)

Note: THHN Insulation is PROHIBITED.

1. Hospital Entrance

1.1. Extend leads to the TII-163 locate terminal using tracer wire rated for direct burial.
   1.1.1. Install #6 or #8 AWG solid, bare ground wire from ground rod to the ground lug center position.
   1.1.2. Install new #12 AWG, Solid HF CCS 30 Mil HDPE High Flex Tracer Wire to the hand hole in the ROW and label direction.

1.2. Crimp style lugs with crimping tool for use on solid wire can be used. Otherwise follow the termination details on the standard drawings.

1.3. Install an ICN-furnished ground rod below the riser in the exposed ground under the building entry riser.

2. **Damaged Pedestal:** At station 0+00 replace the damaged locate pedestal with an ICN-furnished TriView Test Station, 72" Orange w/isolever & ICN Decal. Cut try so that only 18" is above ground at the high school
   2.1. Install Tri-View adjacent to the existing shared ICN hand hole.
   2.2. Extend all existing leads to the new Tri-View.
   2.3. Label all wires in the pedestal and label direction facing.
3. Tracer wire shall be pulled through new and existing conduit system as designated on engineering drawings.

3. Splicer Responsibilities: Splicing is excluded from Construction Bid; included for reference only.)

1. Install an ICN-furnished wall-mount FDP on the north wall backboard in the High School FOTs room in the location pictured.
2. Install an ICN-furnished rack-mounted FDP in the hospital data room in the location pictured.
3. **Field Splicing – Daytime**:
   3.1. Terminate fibers 01-12 in an ICN-furnished wall mounted FDP in the highs school FOTs room.
   3.2. Terminate fibers 01-06 in an ICN-furnished rack mounted FDP in the hospital data room.
4. **Labeling:**
   4.1. Wall FDP - Affix a machine-produced tape label to the OUTSIDE stating where each pair of fiber faces (i.e. Pair 1-2 facing High School or Fibers 1 & 2 facing hospital.)
   4.2. Rack-mounted FDP SHALL be labeled by one of the following methods:
      4.2.1. Make printed entries on the proper FDP directory card.
      4.2.2. Use one line per fiber.
      4.2.3. If no directory card exists, affix a machine-produced to the inside the FDP, so that it is visible when the door is opened.
   4.3. NOTE: Failure to label the fiber in the manner specified above will result in the Contractor being sent back to provide labels before any project payment is made.
   4.4. Fiber within a hand hole shall be labeled with permanent metal tags showing the location it faces.
5. OTDR all fibers. Provide test results in an ".sor" format and PDF format for ICN review and acceptance.
6. Bond all armored cables per the "**Locate Facility Requirements" (see above and standard drawings).** Follow ICN standards and manufacturers' standard to ensure all bonds are connected to ground bar or locate pedestal for locating. 3M Scotchlock Shield bonding kits shall be used for connecting to the armored cable. Locate wires be routed out of the splice case shall be sealed. For Tyco closures use the FOSC Closure Sealing Kit.
7. **Provide Pictures of the completed splicing in cases or panels showing preparation, splice trays and final installation.**

ICN Provided Materials: Contractor shall pick up ICN-furnished materials at the ICN warehouse in Des Moines. Contact the ICN warehouse 48 hours in advance to pick up materials; contact Paul Damge (515-725-4749) to ensure availability.

Contractor shall supply all other materials required for proper installation, including but not limited to: HDPE, Grounding and Tracer Wires, Rock, Wire Mesh, etc.

Item	Part #	Quantity	Unit	Note:
12 strand Dielectric SM fiber		5400	LFT	
24" X 36" X 30" TD hand holes w/ 20T lid	PC243630SN20	5	EA	
Ground rod clamp GRC12	GRC12	2	EA	
Ground rods	611360	2	EA	
TriView Test Station 72" Orange w/isolever & ICN Decal	TVT172OB-EM9125	1	EA	
Tii Network Tech Terminal Box	Tii Terminal 163-06	1	EA	
Corning Rack mounted FDP CCH-01U (12/24F+cast+blkhd)	CCH-01U	1	EA	Hospital
Corning Wall mounted WIC WCH-02P (12F+cast+blkhd)	WCH-02P	1	EA	School
CCH Splice Cassette Pigtailed, 12f SC Duplex SM UPC CCH-CS12-59-P00RE	CCH-CS12-59-P00RE	1	EA	School
CCH Splice Cassette Pigtailed, 6f SC Simplex SM UPC CCH-CS06-3C-P00RE	CCH-CS06-3C-P00RE	1	EA	Hosptial
Leviton storage ring 24-inch	48900-OFR	2	EA	
Tyco 450BS Splice Enclosure (takes 450A trays)	F34112-000	0	EA	
Tyco 450A 12 splice tray	497817-000	0	EA	

ICN Responsibilities:
1. Project Management
2. ICN will secure all necessary DOT permits.
3. ICN furnished materials; see above.

ICN Point of Contact for this Project:
Tim Flickinger
515-725-4699 office
515-491-3750 cell

Other Points of Contacts:
1. **Access Point: Pocahontas High School –** Director of Maintenance, Bruce Arnold 712-335-4848, barnold@pacsd.org
2. **End Point: Pocahontas Community Hospital Facilities Director** Kyle Smith, 712-355-3501 (x5237) or 515-230-9679
3. **City of Pocahontas: City Administrator** Mr. Eric List, 712-355-4841
4. **Other: None**

Bid/Job Showing: NONE

Work Start Date: Work may upon award of the bids and completion of contract. Only written modifications to this Scope of Work are binding - Verbal changes to this scope of work by any person or persons are not binding, unless confirmed in writing.

Completion Date: Not later than 45 days from award of bid and contract execution. Desired Completion date is July 22nd (extension may be negotiated based upon weather and/or unforeseen construction problems in the ROW)

Quotes Due Date:
Quotes must be received by Sheri Stephens, ICN Contracting, **NLT 2PM on June 6th.**

Quotes: Contractors must submit quote as for **Construction Bid to perform duct and fiber installation only. ICN can require a break down of lump sum bids into labor and materials.**

Items under the "Splicer Responsibilities" are excluded from the Construction Bid. Splicing will be handled separately. Contractor is responsible for the installation of all other items required in this Scope of Work.

STANDARD INSTALLATION REQUIREMENTS:

Note red, highlighted changes to ICN standards installation requirements as of 1/28/2016.

General Requirements:

1. The contractor **shall** pothole all existing utilities.
2. Provide the owners of any natural gas utility 48 hours advance notice that work is scheduled in the vicinity of their lines/mains so that they can provide standby and protect services.
3. Maintain proof of notification to and receipt of notification by the gas utility.
4. Permits and coordination
   - 4.1. Secure all necessary state and local (city, county, etc.) permits, public or private easements, facility permits, usage permits, and any other permit required by an Authority Having Jurisdiction (AHJ).
   - 4.2. ICN will obtain and provide copies of IDOT permits.
   - 4.3. If permits are required to be in the name of the owner rather than the contractor, the contractor shall prepare the permit for the owner's signature.
   - 4.4. Coordinate installation with all owners and AHJ over the route, the fiber, Right-of-Way and buildings in which end points will be located.
   - 4.5. Failure to coordinate with the AHJ and to obtain all necessary permits is at the peril of the contractor.
   - 4.6. Right-of-Way Permit fees are an authorized extra above the quoted bid price. Excavation permits shall be by the contractor.
   - 4.7. Ensure all facilities are placed within the public Right-of-Way.
5. Ensure that personnel working in the ROW are equipped with and use proper safety equipment and attire.
6. All tools and test equipment required to do a project shall be provided by the Contractor or its subcontractor(s). Security of tools and test equipment shall be the responsibility of each worker. The ICN shall not be responsible for the security of any property left on ICN's property or on property controlled by the ICN or the State of Iowa.
7. Contractor shall be responsible for instructing its employees in safety measures considered appropriate for the job. In addition, the Contractor shall not permit placing or use of tools or materials in traffic lanes or other locations. The tools or materials shall not be placed in such a manner so as to create safety hazards to State employees, contracting agency employees, the public or themselves.
8. Excavations and Trenches: The ICN requires all open excavations or trenches to be monitored and attended to during construction per. The ICN requires all open excavations and trenches backfilled the same day. If the contractor is required to leave an excavation or trench open, then the contractor shall properly fence and/or cover the excavation for safety. Contractor shall follow all OSHA requirements for excavation and trench safety.
9. Contractor and its employees shall comply with all OSHA regulations. The contractor shall comply with all applicable State and Federal Laws.
10. Contractor shall comply with all Iowa One Call requirements as provided by Iowa Code, Chapter 480.
11. Provide all labor and supervision for the project.
12. Provide and install materials needed to result in a fully functional system meeting ICN standards, whether or not the materials or methods are specifically mentioned in this document. See the list of ICN-furnished materials.
13. Install cable route markers furnished by ICN. Where possible, install markers adjacent to poles, buildings or in other protected areas.
14. A copy of this Scope of Work and the Engineering Plan for this project shall be on site and available any time work is being performed. Failure to have the required documents on site may result in ICN requiring the contractor to stop working until the required documents are on-site.
15. Subcontractors shall meet the same qualifications stated for Contractors. Contractor shall obtain approval of the contracting agency's project manager prior to using a subcontractor on any project. Once a subcontractor has been approved, it may be used on other projects.
16. Restore all damage to private property, Right-of-Way, ICN property, and any other property damaged in the course of the work.
    - 16.1. Any disruption of grass in an individual's yard or in a private maintained area of the public right of way (the area between the sidewalk and the street curb) must be restored through re-sodding. Any disruption of the grass in the median way or an unimproved shoulder must be restored either through re-sodding or re-seeding as required by the ROW owner.
    - 16.2. Areas shall be restored to original or better condition.
    - 16.3. Dirt shall be mechanically compacted around handholes and pits.
    - 16.4. Lawns shall be sodded with like grass.
    - 16.5. Contractor is responsible for watering the sod until it has knitted to the ground beneath.
    - 16.6. All debris shall be removed from the construction areas including but not limited to: construction materials, trash, large objects or stones within backfilled areas, etc.

Duct Installation Requirements

1. HDPE duct shall be no less than 48 inches deep.
2. Duct shall be installed in the public Right-of-Way.
3. When crossing Iowa Highway in DOT Right-of-Way, duct shall be no less than 48 inches below grade under the roadway and shoulders. HDPE may be used under the roadway and shoulders if installed at a minimum depth of 48".
4. Should it be necessary to cross private property, the Contractor may apply to the ICN for an exception, and request permission to secure an easement. The easement is required to be in the name of ICN and the contractor shall have the easement prepared by a Land Surveyor licensed in the state of Iowa. Contractor shall be responsible for all fees unless previously authorized by the ICN.
5. At the conclusion of the project, provide and leave a pull rope in all ducts, conduits and pathways, including indoor, outdoor, new and existing.
6. Dirt shall be mechanically compacted at all duct splices, bore pits and around handholes.
7. Ground shall be restored to the condition found prior to construction and debris removed prior to sodding or seeding.
8. All conduits shall be plugged via duct seal or other method upon completion of cable installation.
9. If Schedule 40 PVC conduit is utilized, all angles (45, 90 degree or other) require fittings to long sweep to accommodate minimum cable bend radiuses.
10. The ICN requires pictures by the contractor and/or on- site inspection by ICN staff prior to completion of the project where pipe and fittings are not exposed; i.e. underground, behind a wall, etc.

Handhole Requirements

1. Install handholes so that the lid is level and flush with the surrounding natural grade. The lid SHALL NOT extend above the surrounding natural grade.
2. Provide ¼" opening hardware cloth type screen wire below the handhole.
3. Provide 12 inches of "pea gravel" or rock no larger than ¾" below the handhole. Rock shall be compacted. Gravel shall extend a minimum of 6 inches beyond the outside walls of the handhole.
4. Do not place gravel inside handhole above the hardware cloth.
5. Conduit shall extend a minimum of 6" above the hardware cloth/gravel.
6. Failure of the contractor to install handholes as specified will cause the contractor to return and re-install the handhole according to this specification before payment for the project is made.
7. Handhole installations shall follow ICN standard practice engineering plan.

Fiber Installation Requirements

1. Install fiber according to industry "Best Practices".
2. The contractor shall not violate the manufacturer's minimum installation bend radius when the cable is under tension, or the minimum installed bend radius.
3. To prevent exceeding the manufacturer's maximum pulling tension during installation of the fiber optic cable, the contractor shall use a "Break-away" pulling swivel when installing cable.
4. The "Break-Away" function shall activate at or below the maximum pulling tension specified by the cable manufacturer.
5. The contractor shall test all strands of the fiber, on the reel, prior to beginning fiber installation. Confirm that all strands meet manufacturer's loss specifications.
6. The contractor shall field verify all lengths and existing conditions prior to starting construction.
7. Slack loops in handholes shall be coiled, installed, and secured to avoid damage to the coil and not interfere with lids.
8. Slack loops at splices shall be coiled to match the existing fiber cable tails and allowance for splice preparation.
9. ICN Fiber in all handholes shall be labeled with ICN wrap around cable tags or other labeled cable tags.

Building Entry Requirements

1. Weather-seal all penetrations.
2. Use mortar or similar cement to seal penetration of brick or cement block.
3. Firestop penetrations of any fire-rated floor, wall or ceiling.
4. Replace the Firestop material in any existing Firestopped penetration used by the contractor.
5. All outdoor conduits, of any length, shall be Galvanized Iron Pipe (GIP). EMT, PVC and plastic are prohibited.
6. Immediately upon installation, seal the ends of all ducts with duct seal or expansion foam to prevent siltation or filling with moisture. This applies to both new and existing ducts.
7. Exterior exposed conduit shall be Galvanized Iron Pipe. EMT and plastic prohibited.
8. At the conclusion of the project, ensure that a pull rope is left in ALL pathways, both inside and outside, new and existing.

Locate Facility Requirements

1. Tracer wire shall be continuous.
2. Splices in the tracer wire are not allowed. If tracer wire is accidentally severed, request permission from ICN to splice.
3. Wire splices only in handholes.
4. Use either an epoxy splice kit, Scotch 3M 3832 or a Molex PermaSeal Butt Spice. 10-12 Ga. Splice materials SHALL be designed for underground applications.
5. Leave the wire splice visible in the handhole.
6. Route a ground wire from the ground inside the building, through the entry to the TII 136 terminal.
7. Secure all riser conduits with 3 each two-hole conduit straps.
8. Wire the pedestal/terminal so that locates may be performed in any direction and from the far end.
9. Do not leave any exposed tracer wire or ground wire.
10. Permanently ground the tracer wire at the handhole on the furnished ground rod.
11. At the conclusion of the project leave the tracer wire shield shorted to ground in the locate terminal.
12. Use tracer wire that is rated for direct burial where required. THHN insulation is acceptable for placement within duct, handholes, or enclosures, or any location not in direct continuous contact with soil or water.
13. Label all wires in the locate terminal/pedestal/TriView. (I.e. “Ground”, “Facing DMACC”, “Facing North” etc.)
14. Failure to label the locate wires will cause the contractor to return and properly label the wires before payment for the project is made.
15. Bond tracer wire(s) **within** splice enclosures utilizing a 3M 4460-D\FO Shield Bonding Kit.
16. Route tracer wire(s) out of splice enclosure through a single port utilizing a FOSC closure sealing kit.
17. At splice locations with no locate pedestal, tracer wires shall be bonded together, within the splice enclosure.
18. At each end of any tracer wire, use appropriate-sized ring terminal (crimp) connectors.

DELIVERABLES/ACCEPTANCE:

1. Contractor shall provide construction redline as-builts with:
   1.1. Offsets to fixed objects to the cable/conduit running line, handholes and new facilities.
   1.2. Meter marks of cable installations at handhole entry/exit, splice locations, building entries, etc.
   1.3. One original set of as-built drawings must be provided within two (2) weeks after completion of construction for the ICN management records. Redline as-built drawings must be complete.
2. Contractor shall provide splicing redline of all splicing completed and validation that the splice plan was followed.
3. Contractor is responsible to locate fiber until acceptance by the ICN. Acceptance includes:
   3.1. Submission of construction and splicing red line drawings by contractor.
   3.2. Assignment of link number by the ICN (if applicable).
   3.3. Submission of final as built drawing by the ICN to the ICN Network Maintenance Provider.
   3.4. Submission to Iowa One Call and the ICN Network Maintenance Provider’s contract locater.
   3.5. The measurements in the Statement of Work are estimates and need to be verified by the contractor.
4. **Only written modifications to this Scope of Work are binding -** Verbal changes to this scope of work by any person or persons are not binding, unless confirmed in writing.
5. Final payment will not be processed until all deliverables are received and accepted.